GLOSSARY

40 CFR Part 191, Protection of Environment - EPA: Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes – The EPA's environmental standards for the storage (Subpart A) and disposal (Subpart B) of spent nuclear fuel, and high-level and TRU radioactive wastes. This is the primary post-closure standard that applies to WIPP. Subpart C of 40 CFR Part 191 establishes the requirements that apply to the performance assessments and compliance assessments that will be used to demonstrate compliance with the requirements of the disposal regulations.

Acceptable Knowledge - Per 40 CFR 194.2, Acceptable knowledge is any information about the process used to generate waste, material inputs to the process, and the time period during which the waste was generated, as well as data resulting from the analysis of waste, conducted prior to or separate from the waste certification process authorized by EPA's Certification Decision, to show compliance with Condition 3 of the certification decision appendix A of this part.

Anticipated Inventory - As defined in this report, the sum of the total stored and total projected inventory volumes is the anticipated volume.

Buried Waste - TRU waste buried in shallow trenches prior to the 1970 Atomic Energy Commission policy that required TRU waste to be retrievably stored. This waste is left in place for the majority of DOE TRU waste generator sites.

Cement - A dry powder made from silica, alumina, lime, iron oxide, and magnesia, which hardens when mixed with water. Used as an ingredient in concrete and also used to solidify liquid wastes, resulting in a homogeneous monolith.

Complexing Agent - See Organic Ligand.

Contact-Handled (CH) TRU Waste - Packaged TRU waste with an external surface dose rate of less than 200 mrem per hour.

Current Form Waste - The chemical and physical status of waste when it is generated and as it is currently being stored on site.

Defense Waste - (1) Radioactive waste from any activity performed in whole or in part in support of DOE atomic energy defense activities. Excludes waste under the purview of the Nuclear Regulatory Commission or generated by the commercial nuclear power industry. (2) Nuclear waste derived mostly from the manufacturer of nuclear weapons, weapons-related research programs, the operation of naval reactors, and the decontamination of nuclear weapons production facilities.

Department of Energy Site - A DOE-owned or -controlled tract used for DOE operations. Either a tract owned by DOE or a tract leased or otherwise made available to the federal government under terms that afford to DOE rights of access and control substantially equal to those that DOE would possess if it were the holder of the fee (or pertinent interest therein) as

agent of and on behalf of the government. One or more DOE operations/program activities are carried out within the boundaries of the described tract.

Disposal - Emplacement of waste in a manner that assures isolation from the biosphere for the foreseeable future with no intent of retrieval and that requires deliberate action to regain access to the waste. For example, disposal of waste in a mined geologic repository occurs when all of the shafts to the repository area are backfilled and sealed.

Disposal Inventory Volume - The inventory volume defined for WIPP emplacement to be used for performance assessment calculations is the "disposal inventory." The LWA defines the total amount of TRU waste allowed in the WIPP as 6,200,000 cubic feet (approximately 175,560 cubic meters) (U.S. Congress 1992). The Agreement for Consultation and Cooperation (C&C Agreement) limits the RH-TRU inventory to 250,000 cubic feet (approximately 7,079 cubic meters) (DOE and State of New Mexico 1988). Therefore, by subtracting the difference, the CH-TRU inventory is limited to 5,950,000 cubic feet (approximately 168,485 cubic meters).

Emplaced Inventory - Waste that has been disposed at the WIPP as of the inventory date (December 31, 2006) for the purposes of this 2007 annual report.

Final Form Waste - Form of waste in approved packaging that will be shipped to and emplaced in WIPP.

Land Withdrawal Act - The 1992 legislation passed by the U.S. Congress (Public Law 102-579; U.S. Congress 1992) withdrawing the surface land and underlying minerals at the WIPP site from public use, transforming the property from the Bureau of Land Management to the DOE, and enabling the start of the WIPP Test Phase. This act was amended in 1996 by Public Law 104-201.

Mixed TRU Waste - TRU waste that contains both radioactive and hazardous components as defined by the Atomic Energy Act and the RCRA as codified in 40 CFR Part 261.3. The RCRA test phase was removed by Public Law 104-201 – 1996 Land Withdrawal Act Amendments (U.S. Congress 1992).

Newly Generated Wastes - See Projected Inventory.

Non-WIPP Waste Stream - A waste stream that may be a potential WIPP waste stream or a waste stream that is not being shipped to WIPP at the time of this annual report.

Organic Ligands - Organic molecules that are capable of binding to metals including but not limited to acetate, citrate, oxalate and ethylenediaminetetraacetic acid (EDTA).

Oxyanion - Negatively charged ionic species containing oxygen such as sulfate, nitrate, and phosphate.

Payload Container Volume - For the purpose of this document, the payload container volume is the volume that the final form package occupies at the time it is emplaced in the repository. Examples of payload container volume used in this context are ten-drum overpacks (TDOP) with a volume of 4.79 m^3, and RH canister overpacks of three 55-gallon drums with a volume of 0.89 m^3.

Performance Assessment (PA) - Performance assessment is an analysis that: (1) identifies the processes and events that might affect the disposal system; (2) examines the effects of these processes and events on the performance of the disposal system; and (3) estimates the cumulative releases of radionuclides, considering the associated uncertainties, caused by all significant processes and events. These estimates are incorporated into an overall probability distribution of cumulative release to the extent practicable.

Performance Assessment Baseline Calculations (PABC) - A PA run during the recertification that incorporates EPA requested changes. The results of this PA become the WIPP regulatory performance baseline that demonstrates compliance with EPA's radioactive waste containment requirements.

Potential Waste Stream - See Non-WIPP Waste Stream.

Projected Inventory - That part of the inventory that has not been generated but is estimated to be generated at some time in the future by the TRU waste sites. The estimated timeframe may vary, but is usually between 20 and 30 years. "Newly generated waste" also is sometimes used as a synonym for the projected inventory.

Radioactive - Term used to refer to an unstable atomic nucleus that decays with the spontaneous emission of ionizing radiation (also see "radionuclide").

Radionuclide - (1) A species of atom having an unstable nucleus, that is subject to spontaneous decay or disintegration and usually accompanied by the emission of ionizing radiation. (2) Any nuclide that emits radiation. A nuclide is a species of atom characterized by the constitution of its nucleus and hence by the number of protons, the number of neutrons, and the energy content.

Remote-Handled (RH) TRU Waste - Packaged TRU wastes with an external surface dose rate equal to or exceeding 200 mrem per hour.

Scaling - The process for adjusting the CH and RH inventories so that the stored, projected, and emplaced inventories in WIPP apply to the "disposal inventory" or regulatory limits for performance assessment modeling purposes. Only the projected waste stream volumes are scaled.

Stored Inventory - That part of the TRU waste inventory currently in retrievable storage as of the time of the last data call for inventory information. Retrievably stored waste includes waste stored in buildings or in berms with earthen cover since 1970 and does not include any waste that was buried prior to 1970. Stored inventory can be in the "current form waste" or "final form waste." Retrievably stored waste also includes waste that is stored in underground storage tanks, ponds, and as decontamination and decommissioning material identified for disposal that requires retrieval at the sites.

Supersack - Woven plastic bags used to contain MgO used in backfill in the WIPP repository.

Transuranic - Pertaining to elements that have atomic numbers greater than 92, including neptunium, plutonium, americium, and curium. All are radioactive, are not naturally occurring, and are members of the actinide group.

Transuranic (TRU) Waste - (1) Waste containing alpha-emitting radionuclides with an atomic number greater than 92 and half-lives greater than 20 years, at concentrations of TRU isotopes greater than 100 nanocuries per gram of waste. This core definition appears in modified form in various relevant documents. DOE M 435.1-1 and the Land Withdrawal Act (U.S. Congress 1979) define transuranic waste as follows: "Transuranic waste is radioactive waste containing more than 100 nanocuries (3700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half lives greater than 20 years, except for: (1) High-level radioactive waste; (2) waste that the Secretary of Energy has determined, with the concurrence of the Administration of the Environmental Protection Agency, does not need the degree of isolation required by 40 CFR Part 191 disposal regulations; (3) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 CFR Part 61."

Waste Acceptance Criteria (WAC) - The criteria used to determine if waste packages are acceptable for disposal at WIPP. For the purposes of this document, WAC refers to the WIPP WAC.

Waste Form - The physical form of the waste such as sludges, combustibles, metals, etc.

WIPP Waste Stream - A waste stream that is being shipped to WIPP.

TRU Waste Sites - The five major DOE facilities and several smaller sites throughout the U.S. that generate and store TRU waste.

Waste Isolation Pilot Plant (WIPP) - (1) The project authorized under Section 213 of the DOE National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (U.S. Congress 1979) to demonstrate the safe and environmentally sound disposal of radioactive waste materials generated by atomic energy defense activities. (2) A research and development facility located near Carlsbad, New Mexico, to be used to demonstrate a practical, long-term solution to a complex problem: the safe disposal in deep geologic repositories of TRU waste resulting from DOE activities.

Waste Material Parameter (WMP) - A waste material that occurs in TRU waste that is an input parameter into one (or more) current PA model(s) or is required to adequately describe the waste form.

Waste Stream - Waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents.

Waste Stream Profile - A description of a CH-TRU or RH-TRU waste stream destined for shipment to and disposal in WIPP, if authorized under permits and certifications by appropriate regulatory agencies for disposal in the WIPP repository. The waste profile is presented in tabular format and is intended to provide a summary of the important information about a particular waste stream.